

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)**

**CLASS: BTECH
BRANCH: CHEM**

**SEMESTER: V
SESSION: SP/2024**

SUBJECT: CL235 SAFETY AND HAZARDS IN PROCESS INDUSTRIES

TIME: 2 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 25.
 2. Candidates attempt for all 25 marks.
 3. Before attempting the question paper, be sure that you have got the correct question paper.
 4. The missing data, if any, may be assumed suitably.
 5. Tables/Data handbook/Graph paper etc. to be supplied to the candidates in the examination hall.
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			CO	BL
Q1	Discuss the safe handling of dangerous and toxic chemicals.	[5]	CO-1	BL2
Q2	What is a fire triangle? Discuss the difference between fire and explosion. Write short notes on: LEL and UEL	[5]	CO-2	BL2
Q3	A LPG Industrial cylinder is leaking inside on industrial shed having the dimension: length 15 m, width 8 m & height 5 m, for 5 min before stopping the leakage. If the rate of leakage of liquid LPG is 2 liter/min and the liquid LPG to gaseous LPG volume expansion is 250 time. Then predict the following. (a) Whether there is probability of vapour cloud explosion after getting source of ignition. (b)What will be the nature of vapour cloud inside the industrial shed.	[5]	CO-2	BL2
Q4	Define and discuss the differences between the following terms: (a) Sprays and mists (b) Auto ignition temperature and Flash point	[5]	CO-2	BL2
Q5	Discuss the phenomena of Boiling Liquid Expanding Vapour Explosion(BLEVE) and condition for its occurrence.	[5]	CO-3	BL2

:26/02/2024:M